



Multi-Modal Traveler Information System

*Information Clearinghouse
Final Network
Working Paper # 18790.00*

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Issue Date: July 23, 1997

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1. INTRODUCTION

1.1 PROJECT OVERVIEW

1.1.1 GCM Overview

The Gary-Chicago-Milwaukee (GCM) Corridor is one of the four "Priority Corridors" established by the United States Congress in the Inter-Modal Surface Transportation Efficiency Act (ISTEA). These corridors have been selected for special federal transportation funding based on very specific transportation and environmental criteria. The GCM Corridor is broadly identified by the 16 urbanized counties in the states of Wisconsin, Illinois, and Indiana. It includes all major freeways, expressways, major arterials, airports, transit, and rail systems, ports and intermodal transfer stations. It extends 130 miles from north to south and covers an area in excess of 2,500 square miles. The GCM Corridor is home to more than ten million people and employs more than four million persons. Representatives from state, regional and local agencies and private firms including tollways, public transit, departments of transportation, service providers and metropolitan planning organizations actively participate in corridor activities.

The goals and objectives of the GCM Corridor are as follows:

- Create a state-of-the-art corridor
- Improve productivity
- Improve safety
- Reduce energy use and negative environmental impact
- Increase efficiency
- Facilitate the sharing of information between both private firms and public agencies involved in the transportation of goods, materials and people in the GCM Corridor.
- Assist in the improvement of transportation flows in the GCM Corridor.
- Assist in the expansion of multimodal transportation flows.
- Make transportation related information available to both operators and users of the information through local ITS centers.
- Increase traveler mobility and to reduce travel times and costs by making real time information available to interested parties.
- Expand to meet the growth of transportation needs within the corridor and the ability to be modifiable to meet changing operational strategies.
- Compatible with other ITS implementation efforts within the corridor that are consistent with the Corridor Program Plan.

The GCM Corridor offers the opportunity to support USDOT intelligent transportation system (ITS) operational tests and to provide a test bed for long-term research and evaluation of ITS. As part of the effort, a twenty-year Corridor Program Plan has been developed. This plan outlines a vision for ITS applications and the creation of a state-of-the-art test bed. It also defines the roles of the participants. Ten program areas were established to address a common set of program objectives. For this project the focus will be entirely on the first program area, Multi-Modal Traveler Information System (MMTIS).

1.1.2 Multi-Modal Traveler Information System (MMTIS) Overview

The MMTIS project revolves around the concept of a GCM Corridor traveler information system. It involves research in the areas of Intelligent Transportation Systems in the corridor which are currently deployed and proposed systems identified in regional strategic plans or early deployment studies. This information is used to develop a corridor architecture which best suits the characteristics of the diverse resources within the corridor. In addition to the corridor architecture, a corridor strategic plan will be developed. Another key component of the MMTIS project is the design of the Gateway Traveler Information System. The Gateway will be the collection and distribution hub for traveler information in the GCM Corridor. Specific tasks identified in the MMTIS project include developing the following documents for the Gateway: System Definition Document, Requirements Specification, and Interface Control Specification.

1.1.3 Role of the Information Clearinghouse

The Information Clearinghouse will allow key GCM Corridor Participants including decision makers, and the technical leadership, to communicate electronically and collaborate on works in progress. This work will be performed as part of the MMTIS Project, but has implications in the management of the entire GCM Program. The Information Clearinghouse will be implemented in two phases. The first phase is referred to as the Initial Administrative Network and has been operational since March 6, 1997. The second implementation phase is referred to as the Final Network and encompasses additional users and provides added functionality. The second phase will be operational by August 4, 1997.

1.2 PURPOSE

In order to improve communications between the key GCM Corridor participants, decision makers, and technical leadership, a communications network has been developed that will take advantage of existing communications infrastructure and computer systems and provide reliable e-mail and file transfer between all authorized parties. The system is intended to not only improve communications, but also facilitate a broader range of input and feedback on GCM documents, reports, budgets, meetings and ideas. The second implementation phase of the Information Clearinghouse, the Final Network, will significantly increase the total number of Information Clearinghouse users, provide some additional functionality and enhance the existing level of support services.

1.2.1 Goals of this Working Paper

This Working Paper will summarize the lessons learned from the initial implementation of the Information Clearinghouse and outline the proposed configuration and functional capabilities of the Final Network. In addition, all new users added since March 6, 1997 as well as those additional users proposed to be added to the Final Network are identified herein.

Implementation of the Information Clearinghouse Final Network is scheduled to begin immediately following the presentation of this working paper to the Coordination Work Group on July 7, 1997. In order to complete implementation of the Final Network by August 4, 1997, this working paper also makes specific recommendations, including usage (see Section 3) as well as the user services and the responsibilities of the host site provider (see Section 4).

1.2.2 Intended Audience

This working paper is intended to serve as a resource guide to the identified users of the Information Clearinghouse. Since the Information Clearinghouse Initial Administrative Network was implemented on March 4, 1997, an additional 11 users have been included in the Information Clearinghouse network bringing the current total to 41 users. In addition, another 363 potential users have been identified to be included in the Information Clearinghouse Final Network bringing the total number of users to 404. Each of these users are identified in Section 2.

In addition to a resource guide for the 404 potential users of the Information Clearinghouse, this working paper also outlines the functional requirements to be used by the selected host site to establish and setup the Final Network.

1.2.3 Goals and Objectives for the Information Clearinghouse

The Information Clearinghouse is to be designed such that key GCM Corridor participants are interconnected electronically. Each authorized user is to be able to send e-mail as well as transfer electronic files to one another. Unlike the Public Information Center (PIC), which is a library of static, final and approved documents and is accessible to the general public; the Information Clearinghouse is intended to be a repository for GCM documents that are not intended to be publicly distributed and/or are considered works-in-progress. In addition, the Information Clearinghouse will be accessible to only authorized users who will have full access to place and retrieve files to/from the Information Clearinghouse while only the designated system administrator may place files on the PIC. The following identifies the goals and objectives of the Information Clearinghouse.

1. The Information Clearinghouse shall facilitate the use of E-Mail between all authorized users.
2. The Information Clearinghouse shall facilitate the transfer of electronic files which will provide users with the ability to edit documents on their local computer.
3. The Information Clearinghouse shall provide links to other GCM Corridor web sites including the Public Information Center and GCM Homepage.
4. The Information Clearinghouse should be sufficiently easy to use as to allow for frequent as well as periodic use without resorting to user manuals or other references.
5. The Information Clearinghouse is to be secure such that the risk of unauthorized access will be minimized.
6. The Information Clearinghouse is to have firewalls that will not allow users to access other nodes that may be connected to the Information Clearinghouse.
7. The Information Clearinghouse will maximize the use of the existing computing infrastructure employed by each authorized user.
8. The Information Clearinghouse is to be quick, efficient and provided at a moderate cost.

Based on the above stated goals and objectives, the Information Clearinghouse has been designed to include e-mail services, an FTP site, and hyperlinks to other related GCM web sites, in a secure, easy to use environment that is accessible to all authorized users.

1.2.4 Working Paper Organization

This working paper is organized to facilitate use by both the identified users (see Section 2) as well as the host site provider. Immediately following this Introductory section, the existing users are identified in Section 2 as well as nearly 400 additional future users. Section 3 outlines basic policies and procedures for the users to work within the Information Clearinghouse. This section includes basic guidelines on handling files in the FTP site, keeping track of file revisions and where the user should go to get help. Section 4 defines the functional requirements for use by the host site provider in setting up the Information Clearinghouse Final Network. This section also provides the user background information relative to the capabilities of the Information Clearinghouse. Section 5 provides an overview of the working paper and summarizes specific recommendations made herein.

1.3 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Document #17100-1, MMTIS Project Glossary, contains all definitions, acronyms, and abbreviations associated with this project, as well as ITS, communications, computer programming, and other standards in general. The following terms are used throughout this paper and are defined below:

- **Analog:** A continuously variable signal.
- **Asynchronous:** Data that is transmitted without an associated clock.
- **Bandwidth:** The capacity of a communications transmission medium or terminal device to transmit data or information measured in terms of bits or bytes per unit time (i.e. kilobits per second, gigabytes per month, etc.).
- **Baud:** Unit of signal frequency in signals per second. Not synonymous with bits per second since signals can represent more than one bit. Baud equals bits per second only when the signal represents a single bit.
- **Bit:** The smallest unit of data processing information. A bit (or binary digit) assumes the value of either 1 or 0.
- **bps:** Bits per second, units of transmission speed.
- **BSMS:** Bus Services Management System
- **Byte:** A data unit of eight bits.
- **Channel:** The data path between two nodes.
- **CSU:** Channel Service Unit; the hardware interface between a T-1 facility and the premises.
- **CVISN:** Commercial Vehicle Information Systems and Networks
- **Digital:** A signal that consists of discrete states. A binary signal has only two states, 0 and 1.
- **Domain Name:** A domain name is a text name appended to a host name to form a unique host name across the Internet.
- **Download:** The transfer of information from a host node to a remote node.
- **DSU:** Data Service Unit; the hardware interface between the CSU and the data terminal devices.
- **File Server:** A computer that stores data for network users, usually on disks or tapes, and provides network access to that data.
- **FTP:** File Transfer Protocol, a TCP/IP protocol for file transfer.
- **GB:** Gigabyte (10⁹ Bytes)
- **Host:** Generally a node on a network that can be used interactively, i.e. logged into, like a computer.

- **Host Name:** The name assigned to the host.
- **Hyperlinks:** An active area (typically an underlined word or graphic image) on a web page that transports the user to other related web sites.
- **Internet:** A series of local, regional, national and international networks linked using TCP/IP. Internet links many government, university and research sites. It provides e-mail, remote login and file transfer services.
- **IP Address:** Internet Protocol Address
- **kbps:** Kilobits per second (10^3 bits per second).
- **LAN:** Local Area Network, a data communications system consisting of a group of interconnected computers, sharing applications, data and peripherals.
- **Login:** A series of unique security codes, typically a username and password required to access a secure device, application, process or area.
- **MB:** Megabyte (10^6 Bytes)
- **Mbps:** Megabits per second (10^6 bits per second)
- **Modem:** A modulator-demodulator device for changing transmission signals from digital to analog for transmission over phone lines. Used in pairs, one is required at each end of the line.
- **Network:** An interconnected system of computers that can communicate with each other to share files, data and resources.
- **Network Address:** Every node on a network has one or more addresses associated with it including at least one fixed hardware address assigned by the device's manufacturer. Most nodes also have protocol specific addresses assigned by a network manager.
- **Network Management:** Administrative services for managing a network, including configuring and tuning, maintaining network operation, monitoring network performance, and diagnosing network problems.
- **Node:** Any intelligent device connected to the network. This includes terminal servers, host computers, and any other devices (such as printers and terminals) that are directly connected to the network. A node can be thought of as any device that has a "hardware address" (see Network Address).
- **Packet:** A series of bits containing data and control information, including source and destination node addresses, formatted for transmission from one node to another.
- **Point-to-Point:** A circuit connecting two nodes only, or a configuration requiring a separate physical connection between each pair of nodes.
- **PPP (Point-to-Point Protocol):** The successor to SLIP, PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits.
- **Print Server:** A dedicated computer that manages printers and print requests from other nodes on the network.
- **Protocol:** Specified rules and/or formats for performing functions, communicating, and interacting with computer systems or networks.
- **Router:** Hosts which are connected to more than one network and route messages between them.
- **Server:** A computer that provides resources to be shared on the network, such as files (file server) or terminals (terminal server).
- **SEDP:** Strategic Early Deployment Plan for Northeast Illinois
- **SLIP:** Serial Line Internet Protocol, a protocol for running TCP/IP over serial lines.
- **T-1:** Communication lines conditioned to provide data transmission rates up to 1.544 Mbps.
- **T-3:** Communication lines conditioned to provide data transmission rates up to 44.736 Mbps.

- **TCP/IP:** Transmission Control Protocol (TCP) and Internet Protocol (IP) are the standard network protocols in UNIX environments. They are almost always implemented and used together and called TCP/IP.
- **Telnet:** Telnet is an application that provides a terminal interface between hosts using the TCP/IP network protocol. It has been standardized so that "telnetting" to any host should give one an interactive terminal session, regardless of the remote host type or operating system.
- **Terminal Server:** A device that facilitates communication between hosts and terminals.
- **Throughput:** The amount of data transmitted between two points in a given amount of time, e.g., 10 Mbps.
- **Topology:** The arrangement of the nodes and connecting hardware that comprises the network.
- **TVMS:** Transit Vehicle Management System
- **Upload:** The transfer of information from a remote node to a host node.
- **URL:** Universal Resource Locator. The URL is the text description of a web or FTP site Internet address. A typical URL is: <http://www.ai.eecs.uic.edu/GCM/GCM.html>.
- **UNIX:** A multitasking, multi-user computer operating system developed by AT&T. Several versions exist, e.g., the Berkeley version.
- **UIC-EECS:** The University of Illinois at Chicago, Electrical Engineering and Computer Science Department.
- **Wide Area Network (WAN):** A network over a large geographical area which interconnects local area networks using common carrier or private communications services.

1.4 RELATED DOCUMENTS

This working paper is part of a series of documents and working papers produced to support the design of the GCM Corridor Multi-Modal Traveler Information System. Related documents and working papers include:

- Document #17001 - Project Operating Plan
- Document #17100-1 - Project Glossary
- Document #17150 - Gateway Traveler Information System (TIS) System Definition Document
- Document #17200 - GCM Corridor Architecture Functional Requirements
- Document #17250 - Gateway Traveler Information System (TIS) Functional Requirements
- Document #17300 - GCM Corridor Architecture Interface Control Requirements
- Document #17350 - Gateway Traveler Information System (TIS) Interface Control Requirements
- Working Paper #18250 - Cellular 911 - State of the Practice
- Working Paper #18380 - Corridor User Needs and Data Exchange Requirements
- Working Paper #18400 - Current and Proposed ITS Initiatives
- Working Paper #18500 - GCM MMTIS Strategic Plan
- Working Paper #18520 - Performance Criteria for Evaluating GCM Corridor Strategies and Technologies
- Working Paper #18550 - Alternative GCM Corridor Technologies and Strategies
- Working Paper #18600 - System Interfaces and Information Exchange
- Working Paper #18700 - Information Clearinghouse - Initial Administrative Network
- Working Paper #18830 - Weather Detection System Standard Message Sets

- Working Paper #19140 - Gateway Traveler Information System (TIS) Phased Implementation Plan
- Working Paper #19210 - Lessons Learned
- Working Paper #19220 - Gateway Design Options
- Working Paper #19840 - Variable Message Sign (VMS)/Highway Advisory Radio (HAR) State of the Practice
- Working Paper #19845 - Variable Message Sign (VMS)/Highway Advisory Radio (HAR) Suggested Guidelines

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2. INFORMATION CLEARINGHOUSE FINAL NETWORK USERS

2.1 INITIAL USERS

The Information Clearinghouse Initial Administrative Network encompassed a total of 30 users. On March 6, 1997, 21 of these 30 users had access to the Information Clearinghouse. The remaining nine users were not initially provided access due to several outstanding and various administrative issues. Currently, only five of these initial 30 users are not connected to the Information Clearinghouse. Table 2-1 identifies the initial 30 Information Clearinghouse users and their current connectivity status.

Table 2-1: Initial Users of the Information Clearinghouse

User	Agency/Firm	Connectivity Status
Daryl Taavola ⁽²⁾	BRW, Inc.	Connected
David Zavettero ⁽¹⁾	Chicago Area Transportation Study	Connected
Thomas Smith ⁽¹⁾	Chicago DOT	Connected
Frank Moriarty	Chicago Fire Department	Access not available
Admiral Funk ⁽¹⁾	Chicago Office of Emergency Communications	Connected
Henry Galak ⁽¹⁾	Chicago Office of Emergency Communications	Connected
David Phillips ⁽¹⁾	Chicago Transit Authority	Connected
Olasupo Oloyede ⁽²⁾	City of Gary	Connected
Mariano Schifalacqua	City of Milwaukee	Information not available
Doug Gerleman ⁽¹⁾	Federal Transit Administration	Connected
Peter Olson ⁽¹⁾	FHWA Illinois	Connected
Donald Johnson ⁽¹⁾	FHWA Indiana	Connected
Bill Brownell ⁽¹⁾	FHWA Region 5	Connected
Mark Hoines ⁽¹⁾	FHWA Wisconsin	Connected
Noble Dennie	Gary Public Transit Corporation	Information not available
Joe McDermott ^{(1) (2)}	IDOT District 1	Connected
Jeff Hochmuth ^{(1) (2)}	IDOT ITS	Connected
Joseph Ligas ^{(1) (2)}	IDOT ITS	Connected
Tony Cioffi ⁽¹⁾	IDOT TSC	Access not available
Neal MacDonald ^{(1) (2)}	Illinois State Toll Highway Authority	Connected
Delmae Heinlein ⁽¹⁾	INDOT (Borman ATMS)	Connected
Troy Boyd ⁽¹⁾	INDOT (Borman ATMS)	Connected
Dan Shamo ^{(1) (2)}	INDOT ITS	Connected
Bill Brown ^{(1) (2)}	Northwest Indiana Regional Planning Commission	Connected
Bill Reynolds ^{(1) (2)}	PACE	Connected
David Urbanczyk ^{(1) (2)}	RTA	Connected
Phil Evenson	Southeast Wisconsin Regional Planning Commission	Information not available
John Corbin ^{(1) (2)}	WisDOT (MONITOR)	Connected
Steve Young ⁽¹⁾	WisDOT (MONITOR)	Connected
Phil DeCabooteer ^{(1) (2)}	WisDOT ITS	Connected

⁽¹⁾ Indicates a response was received to the initial Questionnaire

⁽²⁾ Indicates a response was received to the Potential Needs Questionnaire

Two questionnaires were distributed to these 30 users. The first questionnaire, surveyed the existing computing environment and Internet access. The second questionnaire obtained comments on the performance of the Initial Administrative Network and proposed additional functionality for the Information Clearinghouse. Users responding to the two questionnaires are indicated next to the name of each user identified in Table 2-1. Samples of the initial Questionnaire and the Potential Needs Questionnaire are presented in Appendices A and B, respectively.

2.2 ADDITIONAL USERS

Subsequent to the implementation of the Information Clearinghouse Initial Administrative Network on March 6, 1997, the Coordination Work Group requested a total of 11 additional users be added to the Information Clearinghouse. These users were added for a variety of reasons consistent with the philosophy and purpose of the Information Clearinghouse. Further, each of these users were currently actively employed in the conduct of Corridor program initiatives and were identified as having an immediate need to have access to the Information Clearinghouse. Table 2-2 identifies the 11 additional users and their current connectivity status.

Table 2-2: Additional Users of the Information Clearinghouse

User	Agency/Firm	Connectivity Status
Adrian Tentner	Argonne National Laboratory	Connected
Marc Cutler ⁽¹⁾	Cambridge Systematics, Inc.	Connected
Syd Bowcott	De Leuw, Cather & Company	Connected
Ed Stillings	Federal Highway Administration	Connected
Jon Ringler ⁽¹⁾	HNTB Corporation	Connected
Jill Schultz	JMS Communications and Research	Connected
Creig Day ⁽¹⁾	NET Corporation	Connected
Larry Henson ⁽¹⁾	Transcore	Connected
Jay Obenberger	WisDOT	Connected
Don Schell ⁽¹⁾	WisDOT District 2	Connected
John Mishefske ⁽¹⁾	WisDOT District 2	Connected

⁽¹⁾ Indicates a response was received to the Additional User Questionnaire

A questionnaire was distributed to these 11 additional users to receive information about their existing computing environment, Internet access, and proposed additional functionality of the Information Clearinghouse. Users responding to the questionnaire are indicated next to the name of each user identified in Table 2-2. A sample of the Additional Users Questionnaire is presented in Appendix C.

2.3 FINAL NETWORK USERS

The Information Clearinghouse has always been intended to be an electronic communications tool to facilitate the transfer of e-mail, file attachments and the transfer of documents between GCM Corridor stakeholders. The Initial Administrative Network was implemented to serve as a test bed for the Final Network to identify any technical problems or issues in handling and/or manipulating files. As such, the Initial Administrative Network included only a sampling of the total number of expected final users of the Information Clearinghouse. A review of the GCM Coalition Directory and an analysis of GCM committee memberships yielded an additional 363 names that would be added to the Information

Clearinghouse Final Network. Table 2-3 identifies each of these candidate users. It is noted, that connectivity for these users will be implemented by the host site provider of the Final Network on or immediately after August 4, 1997.

A questionnaire was distributed to these final network users to receive information about their existing Internet access. Users responding to the questionnaire are indicated next to the name of each user identified in Table 2-3. A sample of the Final Network Users Questionnaire is presented in Appendix D.

Table 2-3: Final Network Users of the Information Clearinghouse

Donald Abraham ⁽¹⁾	Serafin Fernandez ⁽¹⁾⁽³⁾	Willie M. Lee	Donald A. Roensch
Charles Agnew	Donald Fieldstad	Jonathan Lehrer ⁽¹⁾⁽³⁾	Mike Rogers ⁽¹⁾
Chris Alcordo ⁽¹⁾	Daniel Finley ⁽¹⁾⁽³⁾	Thomas Long	Karyn Romano
Duane A. Alverson, PE	James N. Frank	John Loper ⁽¹⁾⁽³⁾	Ronald J. Romeis
F. Thomas Ament	Gregory Fritz	Arthur Lucien	James F. Rooney
Steve Anacker	Keith Fujihara	Ed Lump ⁽¹⁾⁽³⁾	Terrence Russell
Martin Anderson ⁽¹⁾	Lawrence A. Gardner ⁽¹⁾⁽³⁾	Katherine Lyon-Davis	Ron Rutkowski ⁽¹⁾⁽³⁾
Richard Andresen	Lavell Gatewood	Robert Lzym	Beth Ruyle ⁽¹⁾⁽³⁾
T.J. Andrew ⁽²⁾	Norman Gee	Don Mahnke	Carol W. Ruzig
Phillip Arreola	Kenneth Gembala	Mark Malczewski	Gary Salavitch
Rita Athas	Nick George	Bill Maleckar	Bill Schaefer ⁽¹⁾⁽³⁾
John Bach	Michael Giugno ⁽¹⁾	Sammie L. Maletta	Don Schaefer ⁽¹⁾⁽³⁾
Richard Bacigalupo	Michael Glasheen ⁽¹⁾⁽³⁾	John Maniscalco	David W. Schelling
Ronald Baker ⁽¹⁾	Jim Goetz, Jr.	Jeff Mantes ⁽¹⁾⁽³⁾	Philip Scherer ⁽¹⁾⁽³⁾
Paul J. Ballard	June Golden ⁽¹⁾	Steven Martin	Stephen Schindel
Bill Baltutis	Elmo Gonzalez	Patti Masters	Dean E. Schlee ⁽¹⁾⁽³⁾
Barry Bateman ⁽¹⁾	George Gray	Patrick McAtee	Carl Schoedel
Dan Beaver	William V. Gray ⁽¹⁾⁽³⁾	Janet McCabe	Mark Schoeffman
Robert Behler	Rebecca Gutowsky ⁽¹⁾⁽³⁾	Joseph McCarthy	Joseph Schofer ⁽¹⁾⁽³⁾
Edward Beimborn ⁽¹⁾⁽³⁾	Fred Haerter	Peter McCarthy	Robert Schulteis
Joseph Bellina	Gary J. Hamburg	Jack McCoy	Bernard Schultz
Dalip Bemmi	Jerry Hanas ⁽¹⁾⁽³⁾	Joe McDade	Jack Schultz
David Bennett	Alicia Hanlon	James McDaniel, Jr.	Robert Seifert ⁽¹⁾
John Bennett	John Hannon	Dan McDavitt	Fred Serpe
Len Bennett	Michael Hanrahan	Cecil Mehring	Jim Sharp
Aristide Bicunas	Bob Hansen	George Melcher	Doug Shelton
Butch Bingham	Kirk Hansen	Richard Mercier	Richard Shulak
Greg Bishop	Patricia Hansen ⁽¹⁾	Larry Merritt ⁽¹⁾⁽³⁾	Mel Sierakowski ⁽¹⁾⁽³⁾
James Blazek ⁽¹⁾	Kathy Hanson	James D. Metros	Evelyn Skinner
Richard Bolte ⁽¹⁾⁽³⁾	Deborah Hare	John Michalak	James C. Slifer ⁽¹⁾⁽³⁾
Dan Botich ⁽¹⁾⁽³⁾	Terry Heffron	Marina Nava Miklusak	Arland T. Smith ⁽¹⁾
Robert Bradenburg ⁽¹⁾⁽³⁾	Darren Henderson	David Millis	Charles Smith ⁽¹⁾⁽³⁾
Angela Brazzale	Edward Hermann ⁽¹⁾	John Mishefski	Stan Smith
Allen Brogan	Joe Hill	Joanne Mitchell	Alex Smoliak ⁽¹⁾⁽³⁾
Mike Brooks ⁽¹⁾⁽³⁾	John Hill ⁽¹⁾⁽³⁾	Sharon Mohoney	Lester Sokolowski
Stephan Bruenig	James Holland	Lynn Montei	Moose Speror

Larry Brush	Don Holt	Jim Morrissey	Richard Stalbrink
Larry Buckel ⁽¹⁾⁽³⁾	James E. Hough	Janice Morrissy ⁽¹⁾⁽³⁾	Mike Stead
John C. Butorac	Greg Howat ⁽¹⁾⁽³⁾	William Muth	Bill Sterrett
David A. Butterfield ⁽¹⁾⁽³⁾	Milton Howell	Tom Myers ⁽¹⁾⁽³⁾	Ernie Stettenfeld
Richard Butula	Thomas Howell	Michelle Nanni	Thomas Stigler
Thomas Cade ⁽¹⁾	Roger Hruskovich	Minietta Nelson	Ted Stoica ⁽¹⁾⁽³⁾
Tom Cantwell ⁽¹⁾⁽³⁾	Ted Ialeggio	Bob Neuheisel	Maury Straub ⁽¹⁾⁽³⁾
Duane Carlson ⁽¹⁾⁽³⁾	Jean Jacobson	Cheryl Neuton	Michael Survey
Tim Carnahan	Arthur James	Joyce Newland	Jon Syndergard
Jim Carpenter	John Janik	Uwe Niemetschek	Stephen Tapke ⁽¹⁾⁽³⁾
Mike Cervay	Jim Jarzab ⁽¹⁾⁽³⁾	Michael Nighbert, TPM	Bruce Taylor ⁽¹⁾⁽³⁾
Roger A. Chiabai	Pauline Jaske	J.P. Noonan	Odean Teign
Paul Clusen	Mary Jaskula	John O. Norquist	Mary Jane Thomas ⁽¹⁾
Perry Cohn	Robert Jasmon	David Novak ⁽¹⁾⁽³⁾	Charles H. Thompson ⁽¹⁾⁽³⁾
John R. Collins	Alex Johnson	Mike O'Brian	Dan Thompson
Cynthia Collyer	Dennis Johnson	James O'Brien ⁽¹⁾⁽³⁾	Charles Tokarski
Toulla Constantinou ⁽¹⁾⁽³⁾	Eric M. Johnson	Duane O'Donnell	John Tomczyk ⁽¹⁾⁽³⁾
Carl Cook	Mike Johnson	Bill O'Kelly	Kevin Traas
Ron Cooper	Robert Johnson	Ike Orky	Rocky Traviss
Benjamin Coopman ⁽¹⁾	Ken Jonak	Daniel Orlich	Steve Truchan
Paul Coulis	Glen Jones ⁽¹⁾⁽³⁾	Thomas Oswald	Richard Tuma ⁽¹⁾
Kenny Cragen	Thomas Kaeser	Lynn Otte	Dennis Urbaniak ⁽¹⁾
Terry Creydt	Burton Kalister ⁽¹⁾⁽³⁾	John Pacquet	Rodney Vandernouen
Jim Curry	James Kaminski ⁽¹⁾⁽³⁾	Anthony Pagano	Louis Vena
Thomas Czarnyszna ⁽¹⁾⁽³⁾	Warren Kammerer, Jr.	Phil Pagano	John Verhyen ⁽¹⁾⁽³⁾
James Danforth	Stephen Kamuiru ⁽¹⁾⁽³⁾	John Paige ⁽¹⁾⁽³⁾	Dave Vieth ⁽¹⁾⁽³⁾
Duane W. Dedelow, Jr. ⁽¹⁾⁽³⁾	Denarie Kane	John Parsons	Joe Voccia
Thomas DeGiulio	Chester Kass	Robert A. Pastrick	Peter Vondrak
Craig Dellimore	Allan Kehl	Frederick Patrie	Mike Wagner
Joseph DiJohn ⁽¹⁾⁽³⁾	Tom Keilman	Stan Paulis ⁽¹⁾⁽³⁾	Thomas Walker ⁽¹⁾⁽³⁾
Jeffrey Dillon ⁽¹⁾	John Kelly	Dewey Pearman	Janice Ward
Thomas E. Dinger	Anthony N. Khawaja ⁽¹⁾⁽³⁾	Donald Pekel	Gerald Watson
Stanley Dobosz	Steve Kil	Ken Perret	Ralph Wehner
John Doherty	Scott King	Kenneth M. Pesch ⁽¹⁾	Tom Weigel ⁽¹⁾
Paul Doherty ⁽¹⁾	James Klafeta	David F. Peterson	Richard Weiland ⁽¹⁾⁽³⁾
Stan Dostatni	Dianne Klemm	Mike Pjevach	John Welch
James Doyle	Bob Kliesmet	David Pliz	Ken Weshorn
Robert Dreblow	Thomas Klingman	Marty Plumb ⁽¹⁾⁽³⁾	Sylvester Weyker ⁽¹⁾⁽³⁾
Gregory P. Dreyer ⁽¹⁾⁽³⁾	Don Klopke	Gayle Polakowski	WI Environmental, Inc.
John Drummond	Gary Knerr	Norman Pollman	Udo Wilharm
Dave Dufour ⁽¹⁾⁽³⁾	Andrew Knott	Richard Polzin	Jim Wilson
Tyrone Dumas	Barbara N. Koehler	Delmer H. Powell, Jr.	Shane Winn ⁽¹⁾⁽³⁾
Brian DuPont	Pete Kohut	Robert Preifer	Terry L. Witkowski
Dwayne Dzibinski	George Kolettis	William Prond	Mike Witter

Glen Eberly	John Kontrinas	John Pugh ⁽¹⁾	Tom Wiza ⁽¹⁾
Rick Eberly	Paul Kovalik	Tom Puidokas	David Wright
Doug Edmonds	Carl Kowalski	Suzanne Raggs	Vincent C. Wroblewski, Jr.
Lynn Ehlenbeck	Chester Kropidlowski	Fred Ranck	Howard Young ⁽¹⁾⁽³⁾
Charles W. Elliott ⁽¹⁾⁽³⁾	Richard K. Kuenkler ⁽¹⁾⁽³⁾	James Ranfranz	Robert Young ⁽¹⁾⁽³⁾
John Ellis ⁽¹⁾⁽³⁾	Thomas Kujawa	Charles Ray ⁽¹⁾⁽³⁾	Michael Younglove
Roland Elvambuena	Glenn Lampark	Ron Reese	Ken Yunker
Joel Ettinger	Ray Lang	Jim Remm	Firooz Zandi ⁽¹⁾⁽³⁾
Les Fafard	Paul J. Larrousse ⁽¹⁾⁽³⁾	Barry Resnick ⁽¹⁾⁽³⁾	Donald Zeilenga
Craig Faucett	Sheldon Latz	Ed Richardson	Jeff Zens ⁽¹⁾⁽³⁾
Paul Feller	David J. Leack	Richard Roehl	

⁽¹⁾ Indicates a response was received to the Final Network Users Questionnaire (99 of 363)

⁽²⁾ Indicates a questionnaire was returned with no forwarding address (1 of 363)

⁽³⁾ Indicates existing access to the Internet (75 of 99)

The Coordination Work Group will approve all users and assign an appropriate authorization level of access for use of the FTP site as discussed in the following sections.

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3. POLICY AND PROCEDURE GUIDELINES

The Information Clearinghouse has been designed to include e-mail services, an FTP site, and hyperlinks to other related GCM web sites, in a secure, easy to use environment that is accessible to all authorized users. In order to successfully utilize the Information Clearinghouse, several policies and/or procedures need to be adopted by all users in order to ensure compatibility, security and organization. This is not unlike policies governing the use of a Local Area Network and are intended to ensure the network is properly configured to meet needs of all users. Issues identified to date are addressed below and specific recommendations made to standardize file formats, file naming conventions, and issuing access to new users.

3.1 SAVING FILES IN A STANDARDIZED FORMAT

Information pertaining to the standard set of software applications used by each of the initial users and their organizations on a daily basis was obtained through the initial survey results. Whereas there is currently a wide range of software applications in place, most respondents have suggested that there is a trend in their organizations to standardize on Microsoft products in the future. Results have shown that approximately half of the users use Microsoft software and half use other applications including Lotus Suites, Wordperfect, etc. Regardless of the type of software employed by each user of the Information Clearinghouse, it is possible to be backward compatible. That is, documents created in MS Word 7.0 can be "Saved-As" an MS Word 2.x document. Wordperfect users may not be able to translate the MS Word 7.0 document, but will be able to translate the MS Word 2.x document. Finding the least common denominator for all users such that there is compatibility between the software applications currently in use is the purpose of this Information Clearinghouse policy. The following file formats are recommended for each software application.

1. **Word Processors** - It is recommended that all word processing documents be saved to *Microsoft Word Version 2.x* or *Rich Text Format*. Note that translated documents will not be perfect renditions of the original. This is especially true of formatting codes, imbedded graphics and formulas.
2. **Spreadsheets** - It is recommended that all spreadsheets be saved to *Microsoft Excel Version 4.0 Workbook (extensions .xls or .xlw)*. Alternatively, *Formatted Text* can also be used.
3. **Database** - Database files cannot typically be cleanly translated from one database application to another. It is recommended, where possible, that collaborators of database documents use MS Access. Where this is not feasible, relational databases and flat file databases can be exported to a spreadsheet (*Microsoft Excel Version 4.0 Workbook*). The spreadsheet can be placed in the Information Clearinghouse and another user can upload the spreadsheet and import it into their database application. Alternatively, *Rich Text Format* can also be used.
4. **Graphics** - Graphic files can also be difficult to translate. Generally, any single graphic file can be saved as a bitmap or raster image (BMP extension). However, vector drawings and text lines loose their definition. CAD drawings can be saved to the DXF file format, but again, formatting and structure is not well translated to other CAD applications. Graphic presentations will also loose formatting and structure. Where possible, graphic files should be saved in tif, jpg, gif,

bmp, or rtf formats. Presentation applications should be saved as *MS PowerPoint Version 4.0* files unless otherwise coordinated between users.

- Project Management** - Project management software does not seem to be widely employed by the users. Again, the structure of these types of files do not allow easy translation to other similar applications. Most, however, will export to spreadsheets. *Microsoft Excel Version 4.0 Workbook* is recommended. Users should collaborate and agree on a standard application package or format where possible.

The above recommendations on file formats are considered a general guide. Of course, it is recognized that users will take exceptions to these guidelines as specific needs are identified. This is encouraged. The Information Clearinghouse is intended to be used as a Local Area Network to facilitate e-mail communications and file transfers. As such, any guidelines presented herein are intended only to help organize and standardize the Clearinghouse for long term use. The guidelines are not intended to limit or restrict use.

3.2 FILE NAMING CONVENTIONS

Although current operating system standards do not restrict the length of file names to eight characters, several existing users are still effectively using earlier generations of Windows and DOS. Therefore, all file names should be limited to eight characters and extensions limited to three characters. It is recommended that users not change the default file extensions. In this way, it will be a simple matter to determine whether or not a file resident in the Information Clearinghouse can be used on a local PC. The filename should be descriptive and care should be taken not to overwrite existing files in the Information Clearinghouse with similar filenames. For this reason, it is also recommended that document revision numbers be included in the file name. Actual practices shall be fine tuned during use and as required to meet the specific needs of the users. Table 3-1 describes the common file naming identifiers. The following describes the recommended file naming convention:

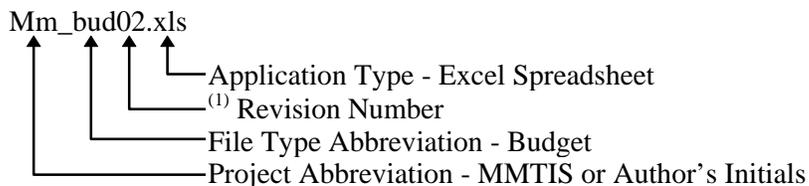


Table 3-1: Common File Naming Identifiers

Project Abbreviation	File Type Abbreviation	Application Type
mm - MMTIS	bud - Budget	wpd - Wordperfect
its - Integrated Transit Systems	wp - Working Paper	doc - MS Word Document
imp - Incident Management Program	min - Meeting Minutes	txt - Text File
gcm - GCM Technical and Planning	ltr - Letter	xls - Excel Spreadsheet
tms - Traffic Management Systems	fax - Facsimile	xlw - Excel Workbook
cvo - Commercial Vehicle Operations	trx - Transmittal	wks - Lotus 123
tsi - Traffic Signal Integration	adm - Addendum	mpp - MS Project
vtc - Vehicle Transponder Systems	ag - Agenda	ppt - MS Powerpoint
air - Advanced Incident Reporting	mem - Memo	bmp - Bitmap

Project Abbreviation	File Type Abbreviation	Application Type
ppp - Public/Private Partnerships	est - Cost Estimates	tif - TIF Document
tic - C-TIC	mh - Man Hour Estimates	jpg - JPG File
etp - Emergency Traffic Patrol	prg - Progress Report	pcx - PCX Document
tsc - Traffic Systems Center	agr - Agreements	dfx - DFX Document
Authors initials	rpt - Reports	exe - Program Files
edp - SEDP		
bsm - BSMS		
tvm - TVMS		
bp - Bus Priority Projects		
cvi - CVISN Projects		
ctw - Constant Time Warning Device		
ctr - Cubit Ticket Reader/Writer		
edm - Expert Driver Model/Simulator		
prt - Personal Rapid Transit		
rxr - Railroad Grade Warning Systems		

⁽¹⁾ The "Revision Number" field is considered self explanatory

This table will be kept in the General Access Folder of the FTP site and entitled, "filename.doc". On a periodic basis, the system administrator will update this file and inform all users that modifications have been made.

3.3 FILE STORAGE

The FTP site shall function as a temporary storage area for documents and files. It should not be relied upon as a permanent storage area for files or an area where system backups can be safely stored off-site. Generally, files will be eliminated from the FTP site on a monthly basis unless the users specifically inform the system administrator to retain specific files or directories.

3.4 AUTHORIZED ACCESS

Access to the Information Clearinghouse will be approved by the Coordination Work Group. The approval will include the recommended level of access for the new user. Once a potential user is approved, the system administrator will contact the new user and establish an appropriate username and password that will allow access to the Information Clearinghouse web site and approved folders within the FTP site. Table 3-2 identifies the FTP site folders and the associated authorization level required to gain access.

Table 3-2: FTP Site Folders and Authorization Access Level

FTP Site Folder	Authorization Level
Executive Committee Folder	Level 1
Coordination Work Group Folder	Level 1
Deployment Committee Folder	Level 2
Technical Committees Folder	Level 3
General Access Folder	Level 4

It is noted, that the Technical Committees Folder includes sub-folders for the ACI Work Group and SIS; the CVO Workgroup; and the TTM Work Group and Transit Subgroup.

Based on the username and password submitted, users will have access to specific folders within the FTP site according to their authorization level. For example, users assigned to Level 1 will have access to all areas of the FTP site. Users assigned to Level 2, will likewise have access to all folders with the exception of the Executive Committee Folder and the Coordination Work Group Folders. Users that are authorized access to Work Group folders beneath the Technical Committees Folder will have access to their specific Work Group Folder. All users will have access to the General Access Folder.

All current users have been assigned a username and password that allows access to the Information Clearinghouse and FTP site. The currently assigned usernames and passwords may be changed, if necessary. The new Final Network users identified in Table 2-3 will be assigned a username and password by the Information Clearinghouse Final Network host site provider.

3.5 SYSTEM ADMINISTRATOR

The Information Clearinghouse will require periodic maintenance and on-going support as referenced in Section 4.2.3. The Information Clearinghouse Final Network host site provider shall take on the responsibilities of the system administrator and be responsible to provide these services in addition to maintaining the FTP site and providing support to the Clearinghouse users. The duties of the host site provider and system administrator are detailed in Section 4.

3.6 LOG FILES

A log file placed in each directory will contain fields to identify the filename, date created/revised, and comments describing all modifications made and by whom. This approach is considered low tech, but will adequately track all file modifications if used consistently. The purpose of the log file is to provide the users a tool to track and manage documents placed on the FTP site that may subsequently be revised by non-authoring users. The log file will allow all users to identify an original documents as well as track what revisions have been made, why and by whom. Each user would be required to update the log file when modifications are made to files or files are added or deleted from the FTP site. The system administrator will create the log file and provide oversight of the file to ensure it is properly maintained and updated.

It is not the purpose of this working paper or the Information Clearinghouse Final Network system administrator to dictate to the users how files should be managed or exchanged. It is recognized that general guidelines need to be established and this Section is intended to identify ideas that will work. Ultimately, it is the users of the system that must be provided the flexibility to use the tool within a generalized structure, but with the freedom necessary to accomplish their work. This Section therefore, is intended only to present guidelines, not rules. As the usage of the Information Clearinghouse becomes better defined it is intended that the guidelines can become more formalized. Finally, it is noted that a complete backup of the Information Clearinghouse Final Network will be performed weekly by the system administrator.

4. INFORMATION CLEARINGHOUSE FINAL NETWORK FUNCTIONAL REQUIRMENTS

Argonne National Laboratory has been identified as the host site provider for the Information Clearinghouse Final Network. Based on the results of the surveys conducted of the initial users, the Final Network will look and function in much the same way that the Initial Administrative Network currently functions. The following sections briefly outline the lessons learned from the Initial Administrative Network implementation and then defines the functional requirements for the Final Network.

4.1 LESSONS LEARNED FROM THE INITIAL ADMINISTRATIVE NETWORK

Each of the initial 30 users identified in Table 2-1 were asked a variety of questions pertaining to their existing use and experience with the Information Clearinghouse. These users were also asked what additional features they would like to see added to the Clearinghouse (see Appendix B). The 11 additional users identified in Table 2-2 were also asked what additional features they would like to see included in the Clearinghouse (see Appendix C). It is noted that not all questionnaires were returned and of those that were returned, not all questions were answered. The following sections briefly describe the responses that were received.

4.1.1 Accessibility and Connectivity

Questions pertaining to the accessibility and connectivity were included in the Potential Needs Questionnaire which was distributed to the initial 30 users. These specific questions were included in the survey to identify the extent of any perceived problems the existing users were experiencing in gaining access to the Information Clearinghouse Initial Administrative Network through the Internet. Of the eight responses received to these questions, five users indicated that access time and connectivity to the Information Clearinghouse Initial Administrative Network was adequate at all times of day. The remaining three responses suggested that accessibility and connectivity was inadequate in the afternoon hours.

Work to track down the source of potential delay in gaining access to the Information Clearinghouse was performed in coordination with the University of Illinois at Chicago. This work identified that the local node site being tested (IDOT-ITS Computers) was seeking access to the Information Clearinghouse host site in Kansas City through a circuitous route around various cities throughout the United States. The Information Clearinghouse Initial Administrative Network host site in Kansas City subsequently increased their bandwidth to the Internet and it appears that this problem has been substantially mitigated. It is noted, that the afternoon hours are considered peak Internet traffic hours and greater delays are experienced at these times of day. Users are encouraged to access the Information Clearinghouse during the morning or late afternoon hours as possible to minimize access and connection problems.

4.1.2 Information Clearinghouse Utilization

The initial 30 users were surveyed in the "Potential Needs" Questionnaire to determine what features of the Information Clearinghouse Initial Administrative Network they had accessed, how often they used the Information Clearinghouse and whether or not they felt specialized training would be beneficial. Of the

12 responses received, nine indicated that they had used the Information Clearinghouse ranging from once per week to “Infrequently”. Five of the 12 respondents had used the E-mail services and the FTP site and only three respondents indicated that the Information Clearinghouse Initial Administrative Network was not easy to use. Interestingly, those respondents that indicated the Information Clearinghouse was not easy to use did not indicate that any additional training would be necessary. However, three other respondents indicated that some minimal training would be helpful.

4.1.3 Information Clearinghouse Added Functionality

The initial 30 users identified in Table 2-1 as well as the additional 11 users identified in Table 2-2 were surveyed with respect to what additional features should be investigated to be added to the Information Clearinghouse. The following additional features were addressed:

- Video Conferencing,
- Voice Conferencing,
- Chat Rooms,
- Collaborative Computing, and
- Remote Printing.

Of the 16 total responses received from these two groups of users, seven suggested that further investigation into video conferencing is warranted. Six suggested voice conferencing be added to the Clearinghouse and four respondents felt that collaborative computing may be a useful function of the Information Clearinghouse. Two users felt the chat room would be useful and only one user felt that remote printing would be beneficial.

The video and voice conferencing functions received the most interest. One respondent indicated that many of the agencies participating in the GCM Corridor project have traditional video conferencing capabilities and that prior to investing resources to add this type of functionality to the Information Clearinghouse, the users should be queried with respect to their existing traditional video conferencing capabilities. Based on the relative lack of interest in a chat room, collaborative computing, and remote printing, and the fact that video and voice conferencing can be provided via alternative means (i.e. speaker phones and traditional video conferencing facilities), it is not recommended that any of the above functions be added to the Information Clearinghouse at this time.

4.2 FUNCTIONAL REQUIREMENTS

Based upon the lessons learned from the implementation of the Initial Administrative Network and input provided by the existing 41 users identified in Tables 2-1 and 2-2, it is possible to identify the Functional Requirements of the Information Clearinghouse Final Network. The Final Network functional requirements are discussed in the following sections.

4.2.1 General Requirements

1. The Information Clearinghouse Final Network shall be capable of storing the software applications identified in Section 3.1 of this working paper. Users should be able to create files and save files in a standardized format. The standardized format will be a mutually agreed on software package and

version number. It is assumed, that all users will have the capability of selecting "SAVE-AS" and identifying one universally accessible file format for each type of software identified. It is noted, that software version specific formatting codes will be lost in any conversion process. This alteration cannot be avoided without all Information Clearinghouse participants agreeing on specific software packages and upgrading at the same time. Table 4-1 summarizes the recommendations made in Section 3.1 of this working paper for each software application.

Table 4-1: File Format Recommendations

Software Application	Recommended File Format
Word Processors	Microsoft Word Version 2.x or Rich Text Format
Spreadsheets	Microsoft Excel Version 4.0 or Formatted Text
Databases	Microsoft Excel Version 4.0 or Rich Text Format
Graphics Applications	TIF, JPG, GIF, BMP, or RTF
Presentation Applications	Microsoft Powerpoint Version 4.0
Project Management Software	Microsoft Excel Version 4.0

2. Each Information Clearinghouse user shall have the following minimum computing capability:
 - PCs shall be at least a 486/33 with a minimum of 8 MB of RAM or equivalent
 - Access to a web browser with FTP capabilities to upload and download files or access to FTP software.
 - E-mail access to the Internet
 - Minimum useful connection speed of 14.4 kbps (14,400 bits per second)
3. The Information Clearinghouse web site shall require a login of username and password. Users will not be allowed access to any areas of the web site without valid login identification. The login shall be required prior to accessing the web site. Once successfully logged-in, access to any other areas of the Information Clearinghouse, such as the FTP site, shall not require subsequent login. Specific requirements to gain access to the FTP site are discussed in Section 4.2.2.2.
4. The Information Clearinghouse Final Network shall be expandable to include additional users. Currently, the Information Clearinghouse Initial Administrative Network includes 41 users. As noted, five of these users do not currently have access to the Internet but will gain access in the near future. Table 2-3 identifies an additional 363 new users to be implemented over the next several months. The questionnaire used to survey these users is included in Appendix D. The Information Clearinghouse should be sized to accommodate up to 1,000 total users.
5. The Information Clearinghouse Final Network shall be expandable to include additional functional capability such as Internet voice conferencing, video conferencing, collaborative computing, remote printing, etc. As stated above, these functional capabilities are not required at this time. However, the site should be designed so as to be able to incorporate these features at a later date as required by the users and directed by the Coordination Work Group.
6. The Information Clearinghouse Final Network shall be portable. All web pages and/or software developed to implement the Information Clearinghouse shall be considered property of IDOT. The Information Clearinghouse should be capable of being moved to alternative host sites.

4.2.2 Design Requirements

4.2.2.1 E-Mail Services

1. The Information Clearinghouse Final Network users shall be able to exchange e-mail. E-mail services shall be provided such that users are able to select one or more users and send e-mail. The list of users shall be organized alphabetically. The host site provider shall develop a convenient and easy to use means to select users from the list.
2. The host site provider shall create e-mail groups of established GCM Work Groups and Committees. Selection of these e-mail groups will cause the distribution of e-mail to all identified members of the group. A current list of Work Groups and Committees and their members can be obtained from BRW, Inc., the GCM Corridor System Manager. In any case, the total number of e-mail groups shall not exceed 100.
3. All e-mail sent through the Information Clearinghouse shall be accessible and readable by the authorized Information Clearinghouse Final Network user to whom it is addressed within the control of the host site.
4. When sending e-mail through the Information Clearinghouse, users should not be required to enter any information that is already available within their system configuration files such as their names or e-mail addresses. If necessary, the host site provider will create an e-mail services configuration file where this information can be entered and stored and then used when sending e-mail.

4.2.2.2 FTP Site Services

1. The Information Clearinghouse Final Network users shall be able to send and retrieve documents from a File Transfer Protocol (FTP) site located on the host's server. Since this capability permits the modification of files located in the FTP site by non-authoring users, specific policies and procedures are established in Section 3.
2. It is noted, that the Microsoft Internet Explorer Web Browser, does not allow file uploads to FTP sites. The host site provider shall provide a hyperlink to allow users easy access to download third party FTP software. The FTP software will allow such users to upload files to an FTP site.
3. The FTP storage capacity for the Final Network must be at least 500 MB. The FTP storage capacity can be thought of as the allotted space available to store GCM documents in the Information Clearinghouse. It is anticipated that as the use of the Information Clearinghouse increases, that the FTP storage capacity may also increase accordingly. The host site provider must be capable and willing to increase the total FTP site storage capacity in increments of 100 MB at a reasonable incremental cost consistent with industry averages.
4. The FTP file transfer shall have a minimum capacity of a least 10 GB per month. This figure represents the allowable bandwidth on the FTP site and/or web page each month. For example, a 1.5 MB file posted to the FTP site and uploaded by 25 users will utilize 39 MB $((25 + 1) * 1.5)$ of the monthly allotted bandwidth. The host site provider must be capable and willing to increase the total

FTP site monthly bandwidth in increments of 1,000 MB at a reasonable incremental cost consistent with industry averages.

5. The FTP site security must be provided at a minimum of four security levels consistent with the login required to gain access to the Information Clearinghouse web site as follows:

- Executive Committee and Coordination Work Group Level 1
- Deployment Committee Level 2
- Technical Committees Level 3
 - ACI Work Group and SIS Level 3
 - CVO Work Group Level 3
 - TTM Work Group and Transit Subgroup Level 3
- General Access Level 4

Unauthorized users will not be allowed access to the FTP site. For this reason, each user will be assigned a unique login and password that will allow them access to the FTP site. Security mechanisms are described in Section 3.4.

6. Security measures should be transparent, i.e., unauthorized or “Anonymous” users in the FTP site should receive a message stating that the FTP site is not available. Conversely, appropriately authorized users will have access to the files located at the site. Needlessly calling attention to password requirements and other security measures to unauthorized persons is not desired. However, access to sub-directories within the FTP site, will be accessible to only appropriate authorized individuals or agencies. Any document placed in the FTP site shall be available to other authorized users immediately following a successful upload.

4.2.2.3 Hyperlinks to GCM Areas of Interest

The GCM Information Clearinghouse web site shall include hyperlinks that will connect the user to the GCM homepage or the Public Information Center (PIC). Conversely, hyperlinks could also be placed in the GCM homepage and PIC that would connect users to the GCM Information Clearinghouse web site.

4.2.2.4 Web Site Statistics

The Information Clearinghouse Final Network should provide users with statistical information. The web site statistics should be updated at least once per week. Specific statistical items listed below should be included at a minimum.

- General Web Server Statistics
 - Date & Time report was generated
 - Time frame
 - Total No. of Successful Hits
 - Average Hits per Day
- Most Requested Pages
- Activity Level by Days of the Week
- Summary of Activity by Hour of the Day

4.2.3 Maintenance and Support Requirements

Maintenance of the Information Clearinghouse Final Network will be required. The maintenance will be performed by the host site service provider system administrator. Maintenance and support is defined with the following task descriptions:

- **File Management** - Perform file backups, purge old out-dated files as directed, create directories, identify filename conventions, assist users in performing file translations as required. Backups of any new data will be performed every 24 hours. Complete backups will be performed weekly. Files shall be purged from the FTP site once every three months.
- **Site Updates** - Monitor the Information Clearinghouse web page and/or FTP site, post notes to users, maintain hyperlinks, respond to user requests and complaints.
- **User Help** - Assist users in setting up e-mail groups, posting and retrieving documents to the FTP site, software updates directly related to the Information Clearinghouse, etc. All assistance shall be completed via telephone or e-mail correspondence.
- **Password/Access Assignments** - Assign passwords to users as authorized by the Coordination Work Group and provide access to appropriate areas of the FTP site. New passwords and usernames are required for the Final Network users identified in Table 2-3. Existing users may be assigned new usernames and passwords if necessary. Each user will receive a confidential notification of his/her password as well as instructional material as per Section 4.2.4.
- **Account Maintenance** - Track the Internet account balances and usage. Ensure the usage and capabilities are optimized without limiting access.
- **Add Users** - The host site provider shall add new users to the Information Clearinghouse as requested by the Coordination Work Group.
- **Log File** - A log file will be placed in each FTP site folder. Users will update the log each time a file is added, deleted or revised in the folder. The host site provider shall periodically access each log file and ensure it has been properly maintained by the users. As necessary, the host site provider shall coordinate with the users to ensure the log file is properly maintained.
- **Periodic System Monitoring** - Monitor the Information Clearinghouse service levels and ensure all users have adequate and reasonable access. Evaluate new and better ways to provide the service more efficiently and cost effectively.

The host site provider shall develop a "System Administration Page" to identify the current filename extensions in use (See Table 3-1) as well as any other relevant system administration tasks identified above that would be informative to the users such as files to be purged from the FTP site, current directory structure and security requirements, planned system down times, etc.

4.2.4 Training and Documentation Requirements

The Information Clearinghouse Final Network host site provider shall prepare brief written instructional material to be distributed to each user. The material shall include “snapshots” of each web page or FTP site screen and describe each area, hyperlink, and/or clickable active area and the associated effect. The material shall be updated once per year as required and redistributed to the users. Material contained in Appendix E, “Access Instructions and Authorization”, has been developed to guide users through the use of only the “first” web page of the Information Clearinghouse Initial Administrative Network and can be used as an abbreviated example of the intended content of the above referenced instructional material. It is expected that the instructional material developed by the host site provider will be similar, except will be developed for every page and site within the Information Clearinghouse Final Network.

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5. NEXT STEPS AND SUMMARY OF RECOMMENDATIONS

Upon resolution and approval of the recommendations made in this working paper and summarized below, the approved host site provider will implement the Information Clearinghouse Final Network by August 4, 1997. The new host site provider will “turn-on” the Final Network web pages and notify the existing users (See Tables 2-1 and 2-2) of the new URL address. In addition, the host site provider will assign usernames and passwords to the new Final Network users identified in Table 2-3 that have responded to the Final Network Users questionnaire and have been approved and assigned a specific level of access by the Coordination Work Group.

The following recommendations are made herein:

1. It is recommended, that Argonne National Laboratory (ANL) host the Information Clearinghouse Final Network and be designated the system administrator.
2. ANL will develop the Information Clearinghouse Final Network and pattern the development of this site based on work accomplished in the Initial Administrative Network. The Final Network will conform to the functional requirements stated in Section 4 of this working paper.
3. ANL will develop instructional material as per Section 4.2.4 for review by the Illinois Department of Transportation (IDOT) prior to finalizing the material. Upon receiving approval from IDOT, ANL will distribute the instructional material to all authorized Information Clearinghouse users.
4. ANL will notify all existing users of the Information Clearinghouse of the new URL address upon completing the Final Network to the satisfaction of the Illinois Department of Transportation.
5. The Coordination Work Group will identify, approve and assign specific level of access to for new users to be added to the Information Clearinghouse.
6. ANL will assign usernames and passwords to the new Final Network users who have returned completed questionnaires and been approved for a specific access level by the Coordination Work Group. ANL will provide proper notification to these new users to access the Information Clearinghouse.
7. The Final Network will be available on or before August 4, 1997.
8. Users are to be encouraged to follow the Information Clearinghouse usage guidelines and file formats as referenced in Section 3 and as posted by the system administrator in the Information Clearinghouse.
9. Additional functionality such as video and voice conferencing, collaborative computing or remote printing will not be added to the Information Clearinghouse Final Network at this time. The Final Network will be constructed so as to facilitate the addition of this type of functionality at a future date.

10. Only authorized users will have access to the Information Clearinghouse. The Information Clearinghouse Final Network FTP site will be secured and protected by four levels of authorization as discussed in Section 4.2.

APPENDIX A
QUESTIONNAIRE (INITIAL)

January 15, 1997

«Title» «FirstName» «LastName»
«JobTitle»
«Company»
«Address1»
«Address2»
«City», «State» «PostalCode»

Re: GCM Information Clearinghouse Questionnaire

Dear «Title» «LastName»:

The Gary Chicago Milwaukee (GCM) Program is well underway with planning, design, and implementation efforts ongoing in Indiana, Illinois, and Wisconsin. In order to improve communications between all critical stakeholders, decision makers, and technical leadership, a comprehensive communications network is being developed that will take advantage of the existing Internet infrastructure and provide reliable e-mail and file transfer between all involved parties. In addition as time permits, video conferencing and voice calls using the Internet will be investigated for a select number of users. The plan will be phased in with an initial implementation of an administrative limited function system by the beginning of March 1997. The design of the ultimate system for a wider audience will be completed by the end of June 1997 with final implementation to be initiated shortly thereafter.

As we have discussed, please complete the attached questionnaire to the best of your ability. The information you provide will aid in the development of a comprehensive schematic diagram of the information clearinghouse and assist us in identifying all pertinent issues relevant to a successful implementation. If you have any questions, please feel free to contact me at your convenience at (312) 930-9119 or e-mail at jringler@hntb.com.

Very truly yours,

HNTB Corporation

Jon T. Ringler, P.E.
Project Manager

cc: Joseph Ligas Illinois Department of Transportation
Syd Bowcott De Leuw, Cather & Company

Multi-Modal Traveler Information System (MMTIS) Project
Information Clearinghouse
QUESTIONNAIRE
January 15, 1997

Purpose

You have been identified as one of the selected critical stakeholders (see attachment A for a complete list). We recognize you have completed similar questionnaires in the past, however, the objective of previous questionnaires was a very preliminary step toward where we are now. Similar questions are asked only in order to update and maintain our records. The purpose of this questionnaire is to assist us in designing a means to share information electronically. Such information could include draft minutes of meetings, budget proposals, draft reports, etc. You will note that the primary emphasis of the questionnaire regards your existing Internet infrastructure and usage policies. We are well aware that once you access the "NET" that an exchange of information can be facilitated. It is only when data enters the existing computer network infrastructure on each end that making the data accessible through all the different software packages, policies and protocols becomes perplexing. For this reason, we have developed this questionnaire such that a complete schematic of the information clearinghouse can be constructed.

Format/Instructions

Please complete the questionnaire to the best of your ability. We will take your answers and develop a complete Internet schematic including all of the information you are able to provide herein. If you can not answer the questions, or simply do not know the answer, please simply mark the appropriate box and we will contact you and/or your system administrator to track down any missing and necessary details. Your cooperation is greatly appreciated. If you have any questions, please contact Jon Ringler at the following:

Jon Ringler, P.E.
HNTB Corporation
111 North Canal Street, Suite 880
Chicago, Illinois 60606-7252
Phone: (312) 930-9119
fax: (312) 930-9063
e-mail: jringler@hntb.com

Please note, the questionnaire must be returned to Mr. Ringler by **January 31, 1997.**

Name: _____

Address: _____

Phone: _____

E-mail Address (if available): _____

PART 1 - Desktop Hardware and Software

Please try your best to complete the questions below. We have made every effort to simplify the questionnaire and still collect all the information we need to connect you to the information clearinghouse. If you anticipate accessing the clearinghouse from your home, please complete another separate form and so indicate in the upper right hand corner of the lead page of the form. If you are not sure of an answer or "Don't Know", please so indicate.

1. Do you have a PC on your desk at work? Yes No
 - If not, do you have ready access to a PC? Yes No (if no, go to question 13)
2. What type of PC do you use? (Manufacturer and Model)
 - How much RAM do you have configured? _____ Don't Know
 - How much hard drive space do you have available? _____ Don't Know
 - What video resolution do you use? _____ Don't Know
 - How many colors can you display? _____ Don't Know
 - Do you have a sound card and speakers? Yes No Don't Know
3. What operating system do you use?
 - Windows 3.1? Windows NT 3.51? UNIX
 - Windows 3.11? Windows NT 4.0? OS/2
 - Windows 95? Other Windows NT _____ Other _____
 - DOS Ver. _____ Macintosh Don't Know

(If you select Windows 3.1 or Windows 3.11, please also select DOS and indicate the DOS Version)
4. Is the PC connected to a local area network (LAN)? Yes No Don't Know
 - What LAN Software do you use?
 - Novell Unix WFW MSN
 - Lantastic Don't Know Other _____
5. What software applications do you use? (Please leave blank if you do not use a software type)
 - e) Word Processors
 - MS Word ver. _____ WordPerfect ver. _____
 - AmiPro ver. _____ Other _____
 - b) Spreadsheets
 - Lotus ver. _____ QuatroPro ver. _____
 - Excel ver. _____ Other _____

c) Database

dBase ver. _____ FoxPro ver. _____

MS Access ver. _____ Other _____

d) Graphics

Corel Draw ver. _____ Harvard Graphics ver. _____

Compel ver. _____ AdobePhotoshop ver. _____

Power Point ver. _____ Other _____

e) Project Management

MS Project ver. _____ Other _____

Fast Track ver. _____

Part 2 - Access to the Internet

6. Do you have access to the Internet? Yes No (if no, go to question 13)

7. Who is your Internet Service Provider?

Netcom Pipeline USA Mindspring Epoch Networks

MCI AT&T 1800Access Global Internet

AOL USA.NET UUNet Micro-Net

Compuserve Don't Know Other _____

8. Do you "dial-in" to access the Internet or do you connect directly to the Internet?

Dial-in

Modem, speed _____ bps

ISDN Line

Direct Connect (Dedicated line)

Dedicated 28.8 or 56.6 IP PPP

ISDN

T1

Don't Know

9. How do you access the Internet?

SLIP/PPP Shell Account Dedicated Link

Don't Know Other _____

10. What Internet tools do you have available?

- WWW Which web browser do you use? _____ Ver. _____
- E-Mail Does your web browser provide access to E-Mail? Yes No
Do you use another E-Mail application? _____ Ver. _____
- FTP Does your web browser provide access to FTP? Yes No
Do you use another FTP application? _____ Ver. _____
- TelNet Does the web browser provide access to TelNet? Yes No
Do you use another TelNet application? _____ Ver. _____
- UseNet Does the web browser provide access to NewsGroups? Yes No
Do you use another NewsGroup application? _____ Ver. _____
- Gopher Does the web browser provide access to Gopher? Yes No
Do you use another Gopher application? _____ Ver. _____
- WAIS Does the web browser provide access to WAIS? Yes No
Do you use another WIAS application? _____ Ver. _____
- IRC Does the web browser provide access to IRC? Yes No
Do you use another IRC application? _____ Ver. _____

11. Do you receive Internet e-mail at your desk? Yes No (if no, go to question 12)

k) Do you regularly check your Internet e-mail? Yes No

l) Approximately how long does it take to check your e-mail (include log-in time)? _____ Minutes

1. Can you send e-mail within your organization? Yes No (if no, go to question 13)

l) Is the internal e-mail system separate from receiving e-mail over the Internet? (i.e. to get e-mail from your co-workers, you access your LAN e-mail software versus having to login to the Internet to access e-mail from people outside your organization.)

Yes (if you have to login to the Internet to get e-mail from people outside your organization)

No (if the Internet and LAN e-mail applications are the same and you do not have to login to the Internet to get e-mail from people outside your organization)

b) What e-mail application do you use? _____

c) How frequently does your e-mail server recycle or poll? _____ Minutes Don't Know

d) Is the file size of your e-mail attachments restricted?

Yes, file size is limited to _____ Megabytes

No

Don't Know

Part 3 - Wrap-up and Procurement Issues

13. Do you have access to communications software such as PCNFS, PCAnywhere, etc.?

Yes _____ ver. _____

No

Don't Know

14. If you identified a need to increase your Internet band-width or accessibility, what procedures and/or purchasing justification are required within your organization? (Please use additional sheet if necessary).

15. If your Internet access is limited or non-existent, is it feasible for you to purchase or obtain a system with Internet capability within your organization?

Yes

No

16. What procedures and/or purchasing justification is required to purchase or obtain a system or software within your organization? (Please use additional sheet if necessary).

17. Are there any outside considerations that would limit or prohibit your use of the Internet such as system security, unauthorized access, web browsing restrictions, etc.?

Yes (Please describe below. Use additional sheet if necessary).

No

18. Would you use the Information Clearinghouse as briefly outlined on Page 1 of this questionnaire?

Yes

No

19. If an Internet account was established for you at no cost to your organization, would you or your organization be willing to provide a computer system and/or software if required?

- Yes
- No

20. Is it feasible within your organization to provide a computer based on the justification as outlined on Page 1 of this questionnaire?

- Yes
- No

21. In order to exchange documents to other GCM stakeholders, can you save documents you create in a standardized format that all stakeholders can read and access? (i.e. WordPerfect documents save as MS Word 2.0 documents or Lotus documents saved in Excel 4.0 format.)

- Yes (if yes, please indicate preferred software and version numbers below)

- Word Processor _____ No Preference
- Spreadsheet _____ No Preference
- Database _____ No Preference
- Graphics _____ No Preference
- Project Management _____ No Preference

- No
- Don't Know

22. Would the seamless exchange of e-mail and small file attachments (less than 2 Megabytes) be beneficial to your organization?

- Yes
- No

23. Would the seamless exchange of large files (greater than 2 Megabytes) be beneficial to your organization?

- Yes
- No

24. How large of a file would you anticipate exchanging with other GCM corridor stakeholders? (i.e. identify the largest file size that you would anticipate wanting to transfer.)

_____ Megabytes Don't Know

25. How often would you anticipate exchanging documents every month? (i.e. identify the average exchange of electronic traffic in terms of Megabytes per month.)

_____ Megabytes per month Don't Know

26. Would a video conferencing feature provided through the Internet be beneficial to your organization if it saved on travel and meeting costs?

Yes

No

• How much would you be willing to pay for Internet video conferencing hardware and software?

\$250 or less?

More than \$250, but less than \$500?

More than \$500, but less than \$1,000?

\$1,000 or more?

27. Would Internet phone software be beneficial to your organization that would allow voice and conference calls over the Internet between stakeholders?

Yes

No

• How much would you be willing to pay for Internet phone hardware and software?

\$50 or less?

More than \$50, but less than \$100?

More than \$100, but less than \$250?

\$250 or more?

28. Would you want to access the information clearinghouse from home?

Yes

No

29. Thank you for your time and effort. The information clearinghouse schematic and working paper will be completed by February 28, 1997 and available for distribution. A presentation will be made before the GCM Committees on February 25, 1997. If you have any questions, comments, or ideas you would like to share, please call, e-mail or so indicate below or on a separate sheet.

30. It may be necessary to obtain more in depth information about your existing computer network and/or Internet access. If available, please provide the name and number of your system administrator or Data Processing Department below. We will contact this person directly if additional information is necessary.

Name: _____ Phone: _____

APPENDIX B

POTENTIAL NEEDS QUESTIONNAIRE

April 21, 1997

«Title» «FirstName» «LastName»
«JobTitle»
«Company»
«Address1»
«Address2»
«City», «State» «PostalCode»

Re: GCM Information Clearinghouse Final Network Questionnaire

Dear «Title» «LastName»:

The Information Clearinghouse Initial Administrative Network has been up and running for a several weeks and we are preparing to address your long term needs for development of the criteria that will define how the Final Network will be designed and implemented. We recognize that there have been a few problems gaining access to the Clearinghouse and we appreciate all of the comments we have received to date and the opportunity to trouble shoot specific issues with many of you. We have now isolated the primary cause of delayed response from the server and believe we have resolved this issue. If you have experienced delays, I am confident that you will now see a marked improvement in performance. Regardless, please let us know so we can better meet your specific needs.

To date, we have seen a fair amount of use in the e-mail services area of the Information Clearinghouse. The FTP site is not getting as much activity. The Information Clearinghouse Working Paper has been posted to the General Access Folder and is available to you for download. Again, if you have any problems, please let us know.

We are in the process of identifying concepts to be considered for implementation of the Information Clearinghouse Final Network. We would appreciate your input on each issue we have identified. Most importantly, we are looking for any ideas on features or services that should also be provided in the Final Network. Realizing that you have received requests to respond to numerous surveys in the last few months, we have made an effort to keep this short and to the point. Of course, if you would like to expound on any issue, please feel free to attach as much additional paper as necessary or call me at your convenience.

Please complete the attached questionnaire to the best of your ability. The information you provide will aid in the development of the criteria that will be applied to the development of the Information Clearinghouse Final Network. If you have any questions, or feel it would be more timely to respond verbally, please feel free to contact me at your convenience at (312) 930-9119 or e-mail at jringler@hntb.com.

Very truly yours,

HNTB Corporation

Jon T. Ringler, P.E.
Task Manager

cc: Joseph Ligas Illinois Department of Transportation
Tom Nicarico De Leuw, Cather & Company
Distribution

Distribution

Troy Boyd	Indiana Department of Transportation
Bill Brown	Northwest Indiana Regional Planning Commission
Bill Brownell	Federal Highway Administration - Region 5
Tony Cioffi	Illinois Department of Transportation
John Corbin	Wisconsin Department of Transportation, District 2
Phil DeCaboater	Wisconsin Department of Transportation
Noble Dennie	Gary Public Transit Corporation
Phil Evenson	Southeast Wisconsin Regional Planning Commission
Doug Gerleman	Federal Transit Administration - Region 5
Henry Galak	Office of Emergency Communications
Delmae Heinlein	Indiana Department of Transportation
Jeff Hochmuth	Illinois Department of Transportation
Mark Hoines	Federal Highway Administration
Donald Johnson	Federal Highway Administration
Joseph Ligas	Illinois Department of Transportation
Neal MacDonald	Illinois State Toll Highway Authority
Joe McDermott	Illinois Department of Transportation
Frank Moriarty	EPDS
Olasupo Oloyede	City of Gary
Peter Olson	Federal Highway Administration
David Phillips	Chicago Transit Authority
Bill Reynolds	PACE
Mariano Schifalacqua	City of Milwaukee
Dan Shamo	Indiana Department of Transportation
Thomas Smith	Chicago DOT
Daryl Taavola	BRW, Inc.
David Urbanczyk	Regional Transportation Authority
Steve Young	Wisconsin Department of Transportation, District 2
David Zattero	Chicago Area Transportation Study

Multi-Modal Traveler Information System (MMTIS) Project
Information Clearinghouse Final Network
POTENTIAL NEEDS QUESTIONNAIRE
April 21, 1997

Please complete the following questionnaire to the best of your ability. We will take your answers and develop criteria that will be applied to the design of the Information Clearinghouse Final Network. If you cannot answer the questions, or simply do not know the answer, please simply mark the appropriate box and we will contact you and/or your system administrator to track down any missing and necessary details. Your cooperation is greatly appreciated. If you have any questions, please contact Jon Ringler at the following:

Jon Ringler, P.E.
HNTB Corporation
111 North Canal Street, Suite 880
Chicago, Illinois 60606-7252
Phone: (312) 930-9119
fax: (312) 930-9063
e-mail: jringler@hntb.com

Please note, the questionnaire must be returned to Mr. Ringler by ***April 30, 1997.***

Name: _____ «FirstName» «LastName» «JobTitle»
Address: _____ «Company»
_____ «Address1» «Address2»
_____ «City», «State» «PostalCode»
Phone: _____ «WorkPhone» Fax: _____ «FaxNumber»
E-mail Address: _____ «Email»

If any of the above is in error, noted incorrectly or has changed recently, please modify as necessary.

1. **Speed** - We currently recognize that access speed to the Information Clearinghouse FTP site needs to be addressed. We are curious, however, as to what your specific experience may suggest. Is your current rate of access to the Information Clearinghouse FTP site adequate, or is quicker access necessary in order for you to use this service more effectively?

- Current rate of access to the Information Clearinghouse FTP site is adequate
- Current rate of access is too slow to make the Information Clearinghouse FTP site useful (Please indicate which times of day when specific problems are encountered as necessary).
- | | | |
|--|----------------------------------|----------------------------------|
| <input type="checkbox"/> 6 a.m. to Noon | <input type="checkbox"/> Weekday | <input type="checkbox"/> Weekend |
| <input type="checkbox"/> Noon to 2 p.m. | <input type="checkbox"/> Weekday | <input type="checkbox"/> Weekend |
| <input type="checkbox"/> 2 p.m. to 6 p.m. | <input type="checkbox"/> Weekday | <input type="checkbox"/> Weekend |
| <input type="checkbox"/> After 6 p.m. through 6 a.m. | <input type="checkbox"/> Weekday | <input type="checkbox"/> Weekend |
| <input type="checkbox"/> None | | |

Comments/ideas and any specific difficulties you have encountered in the use of the Initial Administrative Network _____

2. **Ease of use** - We have made an effort to make the Information Clearinghouse user friendly and intuitively navigable. Realizing that our perception and understanding will be different than yours, we would appreciate any comments or suggestions you may have that will enhance how the Information Clearinghouse can be used.

- Have you used the Information Clearinghouse? Yes No
- Have you used the e-mail service? Yes No
- Have you accessed or used the FTP Site? Yes No
- Do you consider the Information Clearinghouse easy to use? Yes No
- Approximately how often do you use the Information Clearinghouse?
 - Once per week?
 - Once per Day?
 - More than once per week, but less than once per day?
 - More than once per day?
 - Less than once per week?
 - I have used the Information Clearinghouse infrequently
 - I have never used the Information Clearinghouse
- Do you feel you need formal training or detailed documentation in order to effectively use the Information Clearinghouse?
 - Yes
 - No
 - It doesn't matter, I don't anticipate using the Information Clearinghouse
- Comments/ideas and any specific difficulties you have encountered in the use of the Initial Administrative Network _____

3. **Video Conferencing** - It is possible to include video conferencing features within the context of the Information Clearinghouse. Typically, a communications path equal to or greater than 28.8kbps is necessary for minimal service. In addition, hardware including a video camera and in most cases an internal video adapter to drive the video images and related would be required. The advantage of video conferencing will allow users to meet more frequently in formal as well as informal settings within the surroundings of their private offices to address GCM related issues. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding video conferencing functionality to the Information Clearinghouse?
 - Yes
 - No
 - Need more information
- Comments/ideas _____

4. **Voice Conferencing** - Voice conferencing services can also be made available in the Information Clearinghouse. This service would work in much the same way as the voice conferencing features available on most telephone systems. However, rather than going through a telephone exchange, the Internet carries the voice traffic. Additional hardware and software may be required for each user to implement voice conferencing features using the Information Clearinghouse and the Internet. This feature would be similar to video conferencing without the video image displayed on the computer screen. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding voice conferencing functionality to the Information Clearinghouse?

Yes No Need more information

- Comments/ideas _____

5. **Chat Room** - Chat rooms are used extensively throughout the Internet and could be effectively applied to the Information Clearinghouse. Conceptually, the chat room would function in much the same way as voice conferencing, except typed messages are exchanged between users. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding a chat room to the Information Clearinghouse?

Yes No Need more information

- Comments/ideas _____

6. **Collaborative Computing** - Collaborative computing is a relatively new technology concept that allows remote users simultaneous access to the same document. Combined with voice conferencing, two or more users can collaborate on a document and discuss ideas within that document. For example, a user can make changes to a spreadsheet while other users view the modifications as it is being made. Some vendors offer a virtual whiteboard where users can actually sketch ideas interactively. Whether more than one person would be allowed to simultaneously change a document remains to be explored or restricted. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding collaborative computing functionality to the Information Clearinghouse?

Yes No Need more information

- Comments/ideas _____

7. **Remote Printing** - It is possible to connect remote printers through the Internet. This concept can be thought of as a facsimile except documents can be formatted and printed in a reproducible form. Perhaps more relevant are large scale drawings sent to a plotter that are too large to be sent through a fax machine. Alternatively, files can be sent to a reprographic firm where large scale or color products can be printed and delivered to the recipient. Although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding remote printing functionality to the Information Clearinghouse?

Yes No Need more information

- Comments/ideas _____

8. **Dedicated Full Time Internet Connectivity** - Currently, many Information Clearinghouse are not set up to continuously monitor the Internet or e-mail received. For these users, Internet access is gained through a dial-in connection. These users cannot, therefore, know when they receive e-mail without manually making this connection. Other users, who have a dedicated Internet connection, receive an audible tone or will have an icon appear on their screen that notifies them that there is e-mail in their personal mailbox.

- Would a dedicated full time connection to the Internet change the way you use the Information Clearinghouse?

Yes No Need more information

- Do you want a dedicated Internet connectivity?

Yes No Need more information

- Is a dedicated full time connection to the Internet institutionally feasible within your organization?

Yes No Please contact «NetAdmin».

- Comments/ideas _____

9. Thank you for your time and effort. A presentation will be made before the GCM Committees in June 1997 to report our findings and recommendations to you and solicit your critique. If you have any questions, comments, or additional ideas you would like to share, please call, e-mail or indicate below or on a separate sheet.

APPENDIX C

ADDITIONAL USERS QUESTIONNAIRE

May 14, 1997

«Title» «FirstName» «LastName»
«JobTitle»
«Company»
«Address1»
«Address2»
«City», «State» «PostalCode»

Re: GCM Information Clearinghouse Questionnaire

Dear «Title» «LastName»:

The Gary Chicago Milwaukee (GCM) Program is well underway with planning, design, and implementation efforts ongoing in Indiana, Illinois, and Wisconsin. In order to improve communications between all critical stakeholders, decision makers, and technical leadership, a comprehensive communications network is being developed that will take advantage of the existing Internet infrastructure and provide reliable e-mail and file transfer between all involved parties. This communications system is known as the Information Clearinghouse.

An Initial Administrative Network of the Information Clearinghouse has been operational since early March 1997 and currently includes over 21 users. We are in the process of enhancing this initial system and expanding it to incorporate additional users that have been identified as key to the GCM program and will provide meaningful input to the further development of the Information Clearinghouse.

We have prepared the attached questionnaire to obtain necessary information that will assist us in providing you access to the Information Clearinghouse. Please complete this questionnaire to the best of your ability. If you have any questions, please feel free to contact me at your convenience at (312) 930-9119 or e-mail at jringler@hntb.com.

Very truly yours,

HNTB Corporation
Jon T. Ringler, P.E.
Task Manager

cc: Joseph Ligas Illinois Department of Transportation
Syd Bowcott De Leuw, Cather & Company

Multi-Modal Traveler Information System (MMTIS) Project
Information Clearinghouse
ADDITIONAL USERS QUESTIONNAIRE
May 14, 1997

Purpose

The purpose of this questionnaire is to assist us in designing a means for participants in the Gary Chicago Milwaukee Program to share information electronically. Such information could include draft minutes of meetings, budget proposals, draft reports, etc. You will note that the primary emphasis of the questionnaire regards your existing Internet infrastructure and usage policies. We are well aware that once you access the "NET" that an exchange of information can be facilitated. It is only when data enters the existing computer network infrastructure on each end that making the data accessible through all the different software packages, policies and protocols becomes perplexing. For this reason, we have developed this questionnaire such that a complete schematic of the information clearinghouse can be constructed.

Format/Instructions

Please complete the questionnaire to the best of your ability. We will take your answers and develop a complete Internet schematic including all of the information you are able to provide herein. If you can not answer the questions, or simply do not know the answer, please simply mark the appropriate box and we will contact you and/or your system administrator to track down any missing and necessary details. Your cooperation is greatly appreciated. If you have any questions, please contact Jon Ringler at the following:

Jon Ringler, P.E.
HNTB Corporation
111 North Canal Street, Suite 880
Chicago, Illinois 60606-7252
Phone: (312) 930-9119
fax: (312) 930-9063
e-mail: jringler@hntb.com

Please note, the questionnaire must be returned to Mr. Ringler by **June 6, 1997.**

Name: _____ «FirstName» «LastName» «JobTitle»

Address: _____ «Company»

_____ «Address1» «Address2»

_____ «City», «State» «PostalCode»

Phone: _____ «WorkPhone» Fax: _____ «FaxNumber»

E-mail Address: _____ «Email»

If any of the above is in error, missing, noted incorrectly or has changed recently, please modify as necessary.

PART 1 - Desktop Hardware and Software

Please try your best to complete the questions below. We have made every effort to simplify the questionnaire and still collect all the information we need to connect you to the information clearinghouse. If you anticipate accessing the clearinghouse from your home, please complete another separate form and so indicate in the upper right hand corner of the lead page of the form. If you are not sure of an answer or "Don't Know", please so indicate.

1. Do you have a PC on your desk at work? Yes No
 - If not, do you have ready access to a PC? Yes No (if no, go to question 13)

2. What type of PC do you use? (Manufacturer and Model)
 - How much RAM do you have configured? _____ Don't Know
 - How much hard drive space do you have available? _____ Don't Know
 - What video resolution do you use? _____ Don't Know
 - How many colors can you display? _____ Don't Know
 - Do you have a sound card and speakers? Yes No Don't Know

3. What operating system do you use?
 - Windows 3.1? Windows NT 3.51? UNIX
 - Windows 3.11? Windows NT 4.0? OS/2
 - Windows 95? Other Windows NT _____ Other _____
 - DOS Ver. _____ Macintosh Don't Know

(If you select Windows 3.1 or Windows 3.11, please also select DOS and indicate the DOS Version)

4. Is the PC connected to a local area network (LAN)? Yes No Don't Know
 - What LAN Software do you use?
 - Novell UNIX WFW MSN
 - Lantastic Don't Know Other _____

5. What software applications do you use? (Please leave blank if you do not use a software type)
 - a) Word Processors
 - MS Word ver. _____ WordPerfect ver. _____
 - AmiPro ver. _____ Other _____
 - b) Spreadsheets
 - Lotus ver. _____ QuatroPro ver. _____
 - Excel ver. _____ Other _____

- c) Database
- dBase ver. _____ FoxPro ver. _____
- MS Access ver. _____ Other _____
- d) Graphics
- Corel Draw ver. _____ Harvard Graphics ver. _____
- Compel ver. _____ AdobePhotoshop ver. _____
- Power Point ver. _____ Other _____
- e) Project Management
- MS Project ver. _____ Other _____
- Fast Track ver. _____

Part 2 - Access to the Internet

6. Do you have access to the Internet? Yes No (if no, go to question 13)
7. Who is your Internet Service Provider?
- | | | | |
|-------------------------------------|---------------------------------------|--------------------------------------|--|
| <input type="checkbox"/> Netcom | <input type="checkbox"/> Pipeline USA | <input type="checkbox"/> Mindspring | <input type="checkbox"/> Epoch Networks |
| <input type="checkbox"/> MCI | <input type="checkbox"/> AT&T | <input type="checkbox"/> 1800Access | <input type="checkbox"/> Global Internet |
| <input type="checkbox"/> AOL | <input type="checkbox"/> USA.NET | <input type="checkbox"/> UUNet | <input type="checkbox"/> Micro-Net |
| <input type="checkbox"/> Compuserve | <input type="checkbox"/> Don't Know | <input type="checkbox"/> Other _____ | |
8. Do you "dial-in" to access the Internet or do you connect directly to the Internet?
- Dial-in
- Modem, speed _____ bps
- ISDN Line
- Direct Connect (Dedicated line)
- Dedicated 28.8 or 56.6 IP PPP
- ISDN
- T1
- Don't Know
9. How do you access the Internet?
- SLIP/PPP Shell Account Dedicated Link
- Don't Know Other _____

10. What Internet tools do you have available?

- WWW Which web browser do you use? _____ Ver. _____
- E-Mail Does your web browser provide access to E-Mail? Yes No
Do you use another E-Mail application? _____ Ver. _____
- FTP Does your web browser provide access to FTP? Yes No
Do you use another FTP application? _____ Ver. _____
- IRC Does the web browser provide access to IRC? Yes No
Do you use another IRC application? _____ Ver. _____

11. Do you receive Internet e-mail at your desk? Yes No (if no, go to question 12)
- a) Do you regularly check your Internet e-mail? Yes No
- b) Approximately how long does it take to check your e-mail (include log-in time)? _____ Minutes

1. Can you send e-mail within your organization? Yes No (if no, go to question 13)
- Is the internal e-mail system separate from receiving e-mail over the Internet? (i.e. to get e-mail from your coworkers, you access your LAN e-mail software versus having to login to the Internet to access e-mail from people outside your organization.)
- Yes (if you have to login to the Internet to get e-mail from people outside your organization)
- No (if the Internet and LAN e-mail applications are the same and you do not have to login to the Internet to get e-mail from people outside your organization)

Part 3 - Wrap-up, Procurement and Long Term Need Issues

13. Are there any outside considerations that would limit or prohibit your use of the Internet such as system security, unauthorized access, web browsing restrictions, etc.?

- Yes (Please describe below. Use additional sheet if necessary).
- No

14. Would you use the Information Clearinghouse as briefly outlined on the cover letter and on Page 1 of this questionnaire?

- Yes
- No

15. If an Internet account was established for you at no cost to your organization, would you or your organization be willing to provide a computer system and/or software if required?

- Yes
- No

16. How large of a file would you anticipate exchanging with other GCM corridor stakeholders? (i.e. identify the largest file size that you would anticipate wanting to transfer.)

_____ Megabytes Don't Know

17. How often would you anticipate exchanging documents every month? (i.e. identify the average exchange of electronic traffic in terms of Megabytes per month.)

_____ Megabytes per month Don't Know

18. **Video Conferencing** - It is possible to include video conferencing features within the context of the Information Clearinghouse. Typically, a communications path equal to or greater than 28.8kbps is necessary for minimal service. In addition, hardware including a video camera and in most cases an internal video adapter to drive the video images and related would be required. The advantage of video conferencing will allow users to meet more frequently in formal as well as informal settings within the surroundings of their private offices to address GCM related issues. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding video conferencing functionality to the Information Clearinghouse?
 Yes No Need more information
- How much would your organization be willing to pay for Internet video conferencing hardware and software?
 - \$250 or less?
 - More than \$250, but less than \$500?
 - More than \$500, but less than \$1,000?
 - \$1,000 or more?

Comments/ideas _____

19. **Voice Conferencing** - Voice conferencing services can also be made available in the Information Clearinghouse. This service would work in much the same way as the voice conferencing features available on most telephone systems. However, rather than going through a telephone exchange, the Internet carries the voice traffic. Additional hardware and software may be required for each user to implement voice conferencing features using the Information Clearinghouse and the Internet. This feature would be similar to video conferencing without the video image displayed on the computer screen. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding voice conferencing functionality to the Information Clearinghouse?
 Yes No Need more information

- How much would your organization be willing to pay for Internet phone hardware and software?
 - \$50 or less?
 - More than \$50, but less than \$100?
 - More than \$100, but less than \$250?
 - \$250 or more?

Comments/ideas _____

20. **Chat Room** - Chat rooms are used extensively throughout the Internet and could be effectively applied to the Information Clearinghouse. Conceptually, the chat room would function in much the same way as voice conferencing, except typed messages are exchanged between users. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding a chat room to the Information Clearinghouse?
 - Yes
 - No
 - Need more information

- Comments/ideas _____

21. **Collaborative Computing** - Collaborative computing is a relatively new technology concept that allows remote users simultaneous access to the same document. Combined with voice conferencing, two or more users can collaborate on a document and discuss ideas within that document. For example, a user can make changes to a spreadsheet while other users view the modifications as it is being made. Some vendors offer a virtual whiteboard where users can actually sketch ideas interactively. Whether more than one person would be allowed to simultaneously change a document remains to be explored or restricted. Additionally, although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding collaborative computing functionality to the Information Clearinghouse?
 - Yes
 - No
 - Need more information

- Comments/ideas _____

22. **Remote Printing** - It is possible to connect remote printers through the Internet. This concept can be thought of as a facsimile except documents can be formatted and printed in a reproducible form. Perhaps more relevant are large scale drawings sent to a plotter that are too large to be sent through a fax machine. Alternatively, files can be sent to a reprographic firm where large scale or color products can be printed and delivered to the recipient. Although it could change in the future, use of the Internet currently incurs minimal communication costs.

- Do you see a need to further investigate adding remote printing functionality to the Information Clearinghouse?
 Yes No Need more information
- Comments/ideas _____

23. **Dedicated Full Time Internet Connectivity** - Currently, many Information Clearinghouse are not set up to continuously monitor the Internet or e-mail received. For these users, Internet access is gained through a dial-in connection. These users cannot, therefore, know when they receive e-mail without manually making this connection. Other users, who have a dedicated Internet connection, receive an audible tone or will have an icon appear on their screen that notifies them that there is e-mail in their personal mailbox.

- Would a dedicated full time connection to the Internet change the way you use the Information Clearinghouse?
 Yes No Need more information
 - Do you want a dedicated Internet connectivity?
 Yes No Need more information
 - Is a dedicated full time connection to the Internet institutionally feasible within your organization?
 Yes No Please contact our system administrator
- Comments/ideas _____

24. Thank you for your time and effort. We are looking forward to working with you to resolve any problems you may encounter to help ensure your experience with the Information Clearinghouse is meaningful, productive and enjoyable. As a point of reference, we have experienced some delays in accessing the web pages and passing through various security levels to access files. We have made efforts to resolve these issues and we are particularly interested in discussing your experiences with you. If you have any questions, comments, or ideas you would like to share, please call, e-mail or so indicate below or on a separate sheet.

25. It may be necessary to obtain more in depth information about your existing computer network and/or Internet access. If available, please provide the name and number of your system administrator or Data Processing Department representative below. We will contact this person directly if additional information is necessary.

Name: _____ Phone: _____

APPENDIX D

FINAL NETWORK USERS QUESTIONNAIRE

May 15, 1997

«Title» «FirstName» «LastName»
«JobTitle»
«Company»
«Address1»
«Address2»
«City»

Dear «Title» «LastName»:

Re: GCM Information Clearinghouse Questionnaire

The Gary Chicago Milwaukee (GCM) Program is well underway with planning, design, and implementation efforts ongoing in Indiana, Illinois, and Wisconsin. In order to improve communications between all critical stakeholders, decision makers, and technical leadership, a comprehensive communications network has been developed that will take advantage of the existing Internet infrastructure and provide reliable e-mail and file transfer between all involved parties. This communications system is known as the Information Clearinghouse.

An initial version of the Information Clearinghouse has been operational since early March 1997, and currently includes over 30 users. We are in the process of enhancing this initial system and expanding it to incorporate additional users that have been identified as key to the GCM program.

We have prepared the attached questionnaire to obtain necessary information that will assist us in providing you access to the Information Clearinghouse. To make full use of the Information Clearinghouse, users must have access to a web browser that has ftp (download) capabilities properly activated. The minimum useful connection speed is 14.4 kbps (14,400 bits per second). E-mail access to the Internet is required for inclusion in the e-mail communications. Please complete the attached questionnaire to the best of your ability. If you have any questions, please feel free to call me at your convenience at (312) 930-9119 or e-mail at jringler@hntb.com.

Very truly yours,

Jon T. Ringler, P.E. HNTB CORPORATION
Task Manager

JTR/paw
Attachment

cc: Joseph Ligas - Illinois Department of Transportation
Syd Bowcott - De Leuw, Cather & Company

**Multi-Modal Traveler Information System (MMTIS) Project
Information Clearinghouse
FINAL NETWORK USERS QUESTIONNAIRE
May 15, 1997**

If you have any questions, please call Jon Ringler at the following:

Jon Ringler, P.E.
HNTB Corporation
111 North Canal Street, Suite 880
Chicago, Illinois 60606-7252
Phone: (312) 930-9119
fax: (312) 930-9063
e-mail: jringler@hntb.com

Please note, the questionnaire must be returned to Mr. Ringler by **June 6, 1997**.

Name: _____ «FirstName» «LastName» «JobTitle»
Address: _____ «Company»
_____ «Address1» «Address2»
_____ «City»
Phone: _____ «WorkPhone» Fax: _____ «FaxNumber»
E-mail Address: _____ «Email»

If any of the above is in error, missing, noted incorrectly or has changed recently, please modify as necessary.

-
1. Do you have access to the Internet? Yes No

 2. If so, what Internet tools do you have available?
 - WWW Which web browser do you use? _____ Ver. _____
 - E-Mail Does your web browser provide access to E-Mail? Yes No
Do you use another E-Mail application? _____ Ver. _____
 - FTP Does your web browser provide access to FTP? Yes No Don't Know

 3. Can you send e-mail within your organization? Yes No

Is the internal e-mail system separate from receiving e-mail over the Internet? (i.e. to get e-mail from your coworkers, you access your LAN e-mail software versus having to log in to the Internet to access e-mail from people outside your organization.)

Yes (if you have to log in to the Internet to get e-mail from people outside your organization)
 No (if the Internet and LAN e-mail applications are the same and you do not have to log in to the Internet to get e-mail from people outside your organization)

APPENDIX E

ACCESS INSTRUCTIONS AND AUTHORIZATION

Access Instructions and Authorization for the Information Clearinghouse Initial Administrative Network

Instructions on how to connect to the Web page follow:

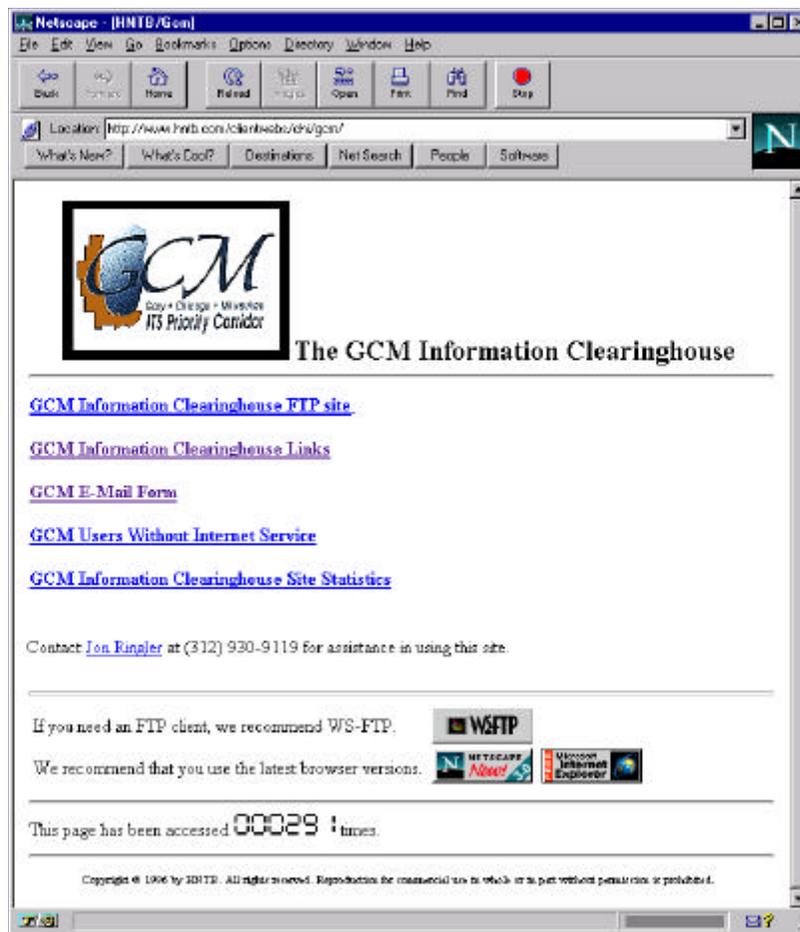
To connect to the web page, select your web browser and key in the following web address (URL):

<http://www.hntb.com/clientwebs/chi/gcm/>

The above address will connect you to the Information Clearinghouse Initial Administrative Network web page. A username and password are not required to access this web site. Figure 1 (on the next page) is a graphical representation of this web page. It is recommended, that you add the above web address to your "Favorites" or "Bookmarks" for later easy reference.

Once you have accessed the web page, you are free to explore and experiment with the site and services currently provided. The following sections briefly describe each of the Information Clearinghouse Initial Administrative Network features and services:

Figure 1 - Information Clearinghouse Web Page



1. **GCM Information Clearinghouse FTP site** - The FTP service accessed through this hyperlink is the heart of the Information Clearinghouse Initial Administrative Network. This site is secure and upon clicking, you will be asked to key in a username and password provided at the end of this facsimile. This is the only area of the Information Clearinghouse where a username and password are required.

The FTP site has been provided to allow the transfer of documents across the Internet. It works in a similar fashion to a network drive and allows the user to upload (from your computer to the FTP site) and download (from the FTP site to your computer) files as necessary. To upload and download files to the FTP site, please refer to the user guide for your specific web browser or FTP software. Up/download options are typically located under the "File" option of your main menu. It is noted, that the Microsoft Internet Explorer web browser does not support FTP file uploads. Third party FTP software is required if you use this web browser. See item number 7 for more information.

Separate FTP folders have been provided as follows:

Folder Name	Folder Abbreviation
Executive Committee	excom
Coordination Work Group Committee	crdwcom
Deployment Committee	dplycom
Technical Committees	tchcom
ACI Work Group	aci
SIS	sis
CVO Work Group	cvo
TTM Work Group	ttm
Transit Subgroup	transit
General Access	gaccess

Privileges to the folders are restricted based on your assigned level of access. However, everyone has access to the lowest level folder, "General Access" allowing all users to share files seamlessly as if they were connected to a common network. Your assigned username and password allows you access to the following FTP site folders:

- «access»
2. **GCM Information Clearinghouse Links** - This service simply provides a hyperlink to other GCM related sites such as the Public Information Center and GCM Homepage.
 3. **GCM E-Mail Form** - This service has been designed to allow users to send e-mail to one another. One or more names can be selected. After selecting "Continue" at the bottom of the page, the user is asked to key in who the message is from (your name); your e-mail address; subject matter and a brief message. After selecting "Submit", the e-mail message(s) are delivered to the intended recipient(s).
 4. **GCM Users Without Internet Service** - This list was added to allow easy reference to all key stakeholders. The users identified on this page do not currently have access to the Internet. A phone number is simply provided for these users for easy reference.
 5. **GCM Information Clearinghouse Site Statistics** - This service provides detailed statistics regarding the use of the Information Clearinghouse Initial Administrative Network. This service has recently been added and will be updated once per week.

6. **Contact Jon Ringler at (312) 930-9119 for assistance in using this site** - If there are any questions, please call me at this number, or click on my name and you can e-mail me.

7.  This button provides a hyperlink for the user to download FTP software. It is noted, that anything downloaded from the Internet will reside on your computer's hard drive. FTP software provides a nice interface to allow users to upload and download files to and from an FTP site. This download is not required if you are currently using Netscape which allows the user to upload and download files to an FTP site. However, Microsoft's Internet Explorer only allows the user to download files. If you are using Internet Explorer, and need to upload files, click on this button and download the appropriate files for your machine. If you need help installing the software, please give me a call and I will help step you through the process. The FTP software is shareware and costs \$37.50.

8.  This button provides a hyperlink for the user to download the Netscape Browser. If you need help installing this browser, please give me a call and I will help step you through the process. Netscape has FTP upload and download capabilities. Netscape software is shareware and costs \$59.95.

9.  This button provides a hyperlink for the user to download the Internet Explorer Browser. If you need help installing this browser, please give me a call and I will help step you through the process. Microsoft makes Internet Explorer available without cost.

It is noted, that the number of "hits" (291) identified in Figure 1 represents the number of times the existing 21 users have accessed the Information Clearinghouse since April 24, 1997.

Your username and password to access the secure FTP site are as follows:

Username: «Username»
Password: «Password»

If you have any questions or run into any difficulty, please call me at (312) 930-9119 or e-mail me at jringler@hntb.com.

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